

97. In the above charts, the purple line represents the extent to which the individual banks' ISDAfix quote submissions deviated from the day's ISDAfix rate. Note that in both charts, the purple line barely appears or does not appear at all until December 2012. Before December 2012, the banks' USD quote submissions always matched the ISDAfix rate. Hence the difference between the banks' submissions and the ISDAfix rate was zero, represented by a horizontal purple line at the level of zero. Suddenly, after December 19, 2012, the purple line moves upwards and downwards almost every day – the banks' quote submissions frequently do not match the ISDAfix rate.

98. It also merits emphasis that the number of contributor banks providing regular quotes has significantly decreased since December 2012. Of the original 15 ISDAfix panel banks, only eight remain.¹⁷ As with the rate quote dispersions, these departures are directly linked to the ongoing investigations into rate-fixing in ISDAfix and other benchmarks. Increased regulatory scrutiny, as well as possible criminal penalties, have made participation in ISDAfix less profitable and, without the ability to manipulate the rates, Defendants “don't see any upside.”¹⁸ Indeed, “[f]irms are pulling out of rates such as . . . ISDAfix on growing concern that they may face lawsuits, fines and criminal penalties if found to have engaged in wrongdoing.”¹⁹

99. The below chart represents the average difference between the highest and lowest ISDAfix quote submissions on each day for the periods stated. For each period, Plaintiff's experts subtracted the lowest ISDAfix quote submission on each day from the highest quote

¹⁷ Intercontinental Exchange, *ISDAFIX Characteristics and Contributor Panels: US Dollar [USD] – Rates*, https://www.theice.com/publicdocs/services/ISDAFIX_USD_Rates.pdf (last visited Sept. 29, 2014).

¹⁸ Liam Vaughan, *Banks Drop Off IsdaFix Panel Amid Rate-Rigging Probes*, BLOOMBERG (Apr. 15, 2013), <http://www.bloomberg.com/news/print/2013-04-14/banks-drop-off-isdafix-panel-amid-rate-rigging-probes.html>.

¹⁹ *Id.*

submission and then averaged the difference for the whole period. The numbers go steadily up after December 19, 2012, indicating that the differences among ISDAfix submissions substantially increased after disclosure of the involvement of banks and brokers in the LIBOR conspiracy and other benchmark scandals. This pattern continues over time, with the average difference between the highest and lowest ISDAfix submission steadily increasing as Defendant Banks came under fire from regulators. In fact, across many tenors, the average difference between minimum and maximum daily quotes more than quadrupled from Period 1 to Period 4. The market provides no explanation for this phenomenon; the only explanation is that the Defendant Banks changed their behavior amid increasing regulatory scrutiny.

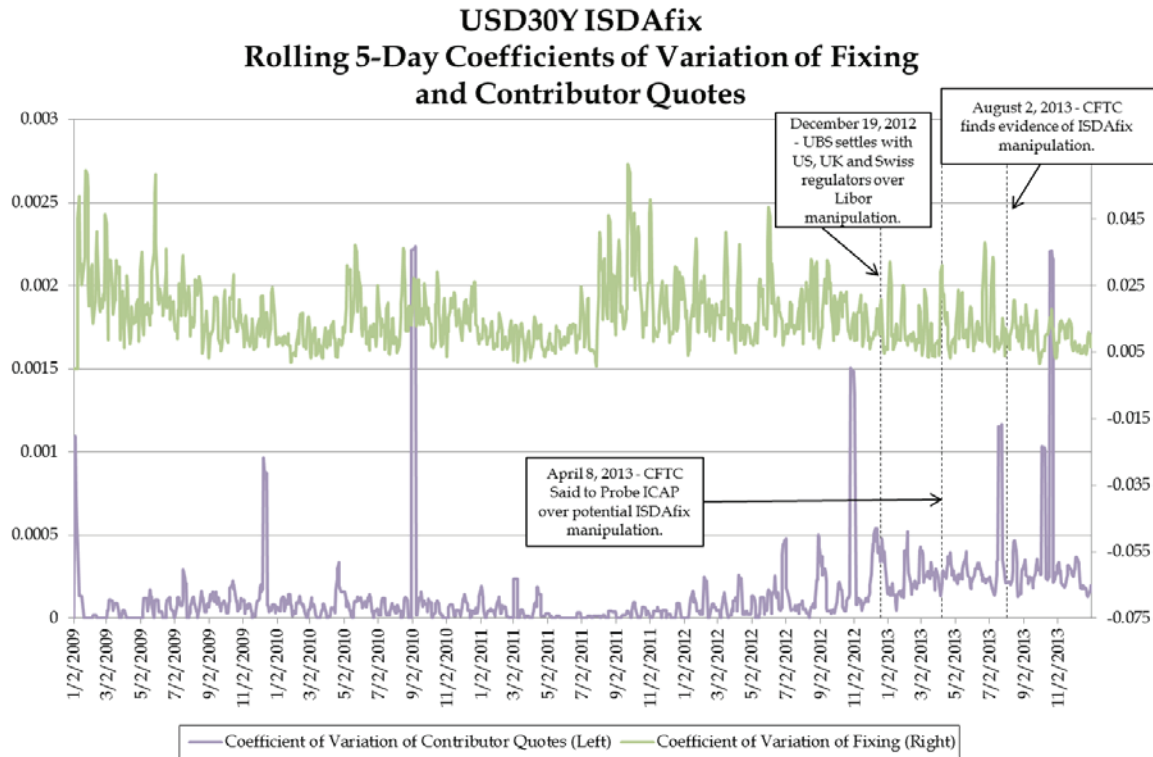
Average Difference Between Minimum and Maximum Daily Contributor Quotes for ISDAfix				
	Period 1	Period 2	Period 3	Period 4
Tenor	(1/2/2009 - 12/18/2012)	(12/19/2012 - 4/7/2013)	(4/8/2013 - 8/1/2013)	(8/2/2013 - 12/31/2013)
USD1Y	0.0013	0.0019	0.0029	0.0040
USD2Y	0.0018	0.0045	0.0026	0.0034
USD3Y	0.0020	0.0033	0.0035	0.0039
USD4Y	0.0026	0.0031	0.0037	0.0045
USD5Y	0.0016	0.0038	0.0028	0.0039
USD6Y	0.0014	0.0034	0.0043	0.0056
USD7Y	0.0018	0.0032	0.0038	0.0049
USD8Y	0.0013	0.0041	0.0048	0.0056
USD9Y	0.0013	0.0038	0.0046	0.0055
USD10Y	0.0021	0.0027	0.0032	0.0044
USD15Y	0.0016	0.0041	0.0049	0.0057
USD20Y	0.0012	0.0043	0.0050	0.0059
USD30Y	0.0010	0.0025	0.0033	0.0044
Source: Thomson Reuters, Bloomberg.				

100. It also merits further emphasis that 2009 was far more economically volatile than 2013, as 2009 was still significantly affected by the financial crisis. This led to high variability in ISDAfix rates from one day to the next. However, despite this high variability of ISDAfix rates, the Defendant Banks' ISDAfix quote submissions matched each other almost every single day. Indeed, during 2009 there was almost no distinction between the Defendant Banks'

individual ISDAfix quote submissions, and they were identical to each other across either all or all but one submission every day. Thus, despite each Defendant Banks' submission changing significantly every day (as shown by the daily variability of ISDAfix rates), such changes were completely coordinated and occurred in unison. In 2013, by contrast, economic markets were more stable, resulting in smaller daily changes in ISDAfix rates as compared to 2009. Yet, despite higher market predictability, Defendant Banks' ISDAfix quote submissions increasingly differed from each other. Why were Defendant Banks' quotes so unified when ISDAfix rates were less predictable, yet diverged when the market stabilized?

101. This is counter to what would be expected to happen if market forces had influenced ISDAfix quote submissions. Periods of high uncertainty cause more variable ISDAfix rates, which should, in turn, be positively correlated with more deviation between individual quote submissions. However, that is not what happened. Defendant Banks were unified and submitted identical ISDAfix rates when the market was highly volatile, and submitted much more diverse quotes when ISDAfix rates became more predictable and stable. Market forces alone do not explain this behavior. Something else, such as the break of a cartel, must be responsible for the end of uniformity in Defendant Banks' submissions.

102. To underscore this point, for the 2006-2013 time period, Plaintiff's experts charted both the variation in individual ISDAfix quotes for the USD 30-year swap rate and the variation of actual ISDAfix rates for that same USD swap rate, with both measures calculated over rolling five-day windows.



Sources: Thomson Reuters, Bloomberg.

103. The above chart presents the coefficient of variation – a normalized measurement of the level of dispersion – for USD 30-year ISDAfix quote submissions calculated daily and averaged over rolling five-day windows. A higher average coefficient of variation means that the submissions for those five days differed more from each other (*i.e.*, that the Defendant Banks’ submissions diverged).

104. The chart also tracks the coefficient of variation for the actual USD 30-year ISDAfix rate over the same rolling five-day windows. A higher coefficient of variation means that USD 30-year ISDAfix rates differed more from each other over those five days (*i.e.*, that there was more variability and uncertainty in the swap markets).

105. If higher market uncertainty, which would raise the coefficient of variation for ISDAfix rates, was responsible for the change in Defendant Banks’ submissions, then there should be a correlation to higher average coefficients of variation for the individual submissions

themselves. But that is not the case for the period from January 2009 through November 2013. The lower, purple line represents the average level of variation in USD 30-year ISDAfix quote submissions for rolling five-day windows over time. The purple line rises when the Defendant Banks' daily ISDAfix quote submissions diverge. The higher, green line represents variation in the USD 30-year ISDAfix rate over the same rolling five-day windows.²⁰ The green line rises when the USD 30-year ISDAfix rate substantially changes from day to day within such five-day windows and falls when that same rate is stable. While the green line may spike or fall for any particular period, what is important is that the overall trend stays steady, slowly decreasing on average from 2009 through 2013.

106. Indeed, while the rate of variation of contributor quote submissions rises substantially after December 18, 2012, the actual ISDAfix rate for USD 30-year swaps proves to be demonstrably more stable after that point than it was in the previous year. As the variation in submissions increases during late 2012 through 2013, the variation in the USD 30-year ISDAfix rate declines. If the dispersion of quote submissions was caused by changes in market stability, one would expect both measures to increase or decrease at the same time. But, in reality, exactly the opposite happened. The increased dispersion of quote submissions after December 2012 has nothing to do with market forces; it is inextricably linked to a change in behavior after ICAP was implicated in LIBOR and other benchmark scandals.

107. That the conspiracy began to break in December 2012 demonstrates consciousness of guilt on the part of Defendants. This is the only plausible explanation for the profoundly anomalous pattern of quote submissions from 2009 to the present.

²⁰ The data in this chart is solely from the Reuters actual/360 swap rate data. *See infra* note 27.

2. Manipulation of ISDAfix Through Trading Activities

108. Throughout the Class Period, Defendants conspired to push ISDAfix rates to artificial levels through a manipulative trading strategy – called “banging the close” – intended to move actual swap rates minutes before the ISDAfix setting window.

109. As noted, the ISDAfix setting process starts with ICAP providing a “reference point” to the Defendant Banks for their submission of rates in accordance with the ISDA definition. That “reference point” is based on the then-current swap rate of trades brokered by ICAP and executable bids and offers submitted by dealers.

110. Defendants conspired to manipulate the actual swap rate immediately before the ISDAfix setting window so as to push the “reference point” that ICAP would submit to the Defendant Banks to a particular rate. By moving the “reference point,” the Defendant Banks caused the ISDAfix setting process to begin at an artificial level and were able to disguise their off-market quotes, as described below. Defendant Banks executed a series of rapid-fire trades and submitted executable bids and offers that were not reflective of the market, but were artificial and reflective of their desire to move ISDAfix rates to whatever level benefitted their trading books. This “banging the close” strategy could not have been successful without the Defendants’ overarching conspiracy to submit identical rates matching ICAP’s reference rate, day-in and day-out.

111. Defendant Banks’ conspiracy was reached through a series of agreements among the Defendant Banks’ traders. These agreements were carried out through telephone calls, emails, and instant message or chat room conversations between swaption and other interest rate traders at the Defendant Banks. On these telephone calls, or through electronic communications, these traders agreed on predetermined levels to which they would work to push the relevant swap rate.

112. Once the traders had reached these agreements, they enlisted rate-swap traders to execute manipulative trades through ICAP and submit executable bids and offers to ICAP that moved the rate. According to anonymous witnesses interviewed by Bloomberg, “swaption traders at banks worked with rate-swap traders at their own firms to manipulate ISDAfix.”²¹ Pursuant to their agreements with traders at other Defendant Banks, these “swaption traders told their rate-swap colleagues the level at which they needed ISDAfix to be set that day in order to bolster the value of their derivatives positions before these were settled the next day.”²² Those “rate-swap trader[s] would then tell a broker at ICAP . . . to execute as many trades in interest-rate swaps as necessary to move ISDAfix to the desired level.”²³

113. Frequently, these communications would involve only a subset of the Defendant Banks who had a particular interest in moving ISDAfix rates to a particular level on a given day. On other days, a different subset of banks may have had an interest in manipulating ISDAfix rates to a different level. But the success of the conspiracy could not have been accomplished without the larger agreement of all of the ISDAfix submitting banks to conform their quotes to the reference rate provided by ICAP.

114. Correspondence produced by the Defendant Banks to the CFTC “show[s] that traders at Wall Street banks instructed ICAP plc brokers in Jersey City, New Jersey, to buy or sell as many interest-rate swaps as necessary to move the benchmark. . .”²⁴ According to a

²¹ Matthew Leising, *Swaps Probe Finds Banks Rigged Rate at Expense of Retirees* BLOOMBERG (Aug. 2, 2013), <http://www.bloomberg.com/news/2013-08-02/swaps-probe-finds-banks-manipulated-rate-at-expense-of-retirees.html>.

²² *Id.*

²³ *Id.*

²⁴ *Id.*

source interviewed by Bloomberg, the Defendant Banks “sought to change the value of the swaps because the ISDAfix rate sets” swaptions prices.²⁵

115. Pursuant to these agreements between the Defendant Banks’ rate-swap traders and ICAP, the Defendants would execute an inordinately high volume of transactions during or just before the first two minutes of the ICAP polling window. According to one witness interviewed by Bloomberg, “[t]his would be done just before 11 a.m. in New York.”²⁶

116. The ICAP brokers had a strong incentive to participate in this conspiracy, as they would receive commissions on derivatives executed to move the ISDAfix rate and generate more overall transaction flow from the Defendant Banks. Consequently, ICAP brokers gladly assisted Defendant Banks in executing an exceedingly high volume of trades just before the “reference point” was set. ICAP brokers profited off each and every one of these trades; the higher the volume, the better. The approximately 20 interest rate swap brokers at ICAP in Jersey City, New Jersey would receive commissions based on every interest rate swap they facilitated. This group of brokers made \$100 million to \$120 million annually for ICAP in 2008 and 2009, according to individuals interviewed by Bloomberg. The top three to five brokers were each paid \$5 million to \$7 million annually. The amount of profit flowing through ICAP, in part because of the Defendant Banks’ manipulative trading, earned ICAP’s New Jersey office the name “Treasure Island.”

117. Economic analysis confirms that Defendants were “banging the close” by executing a series of rapid fire interest rate swaps and submitting executable bids and offers just prior to the opening of the polling window. Plaintiff’s experts analyzed swap rates surrounding the USD polling period for each day from January 2007 to December 2013. Their aim was to

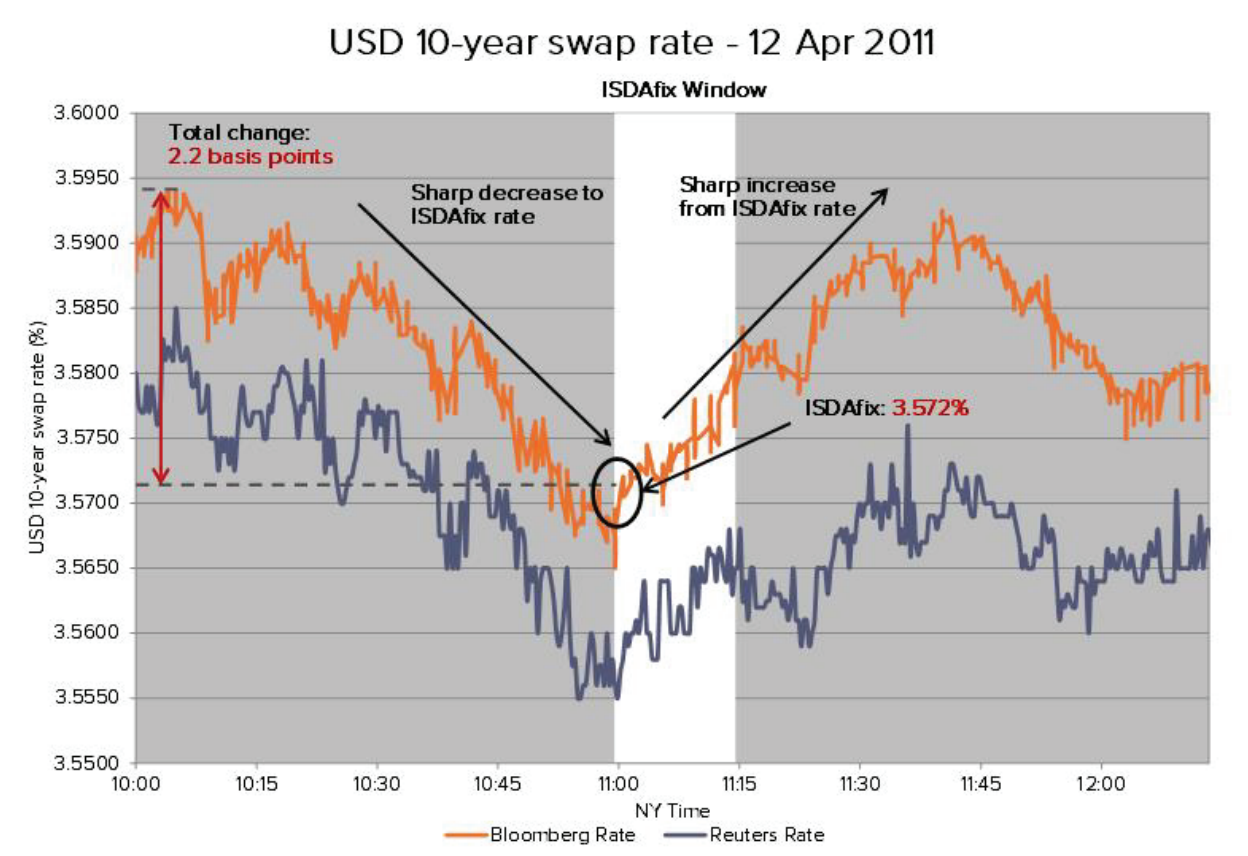
²⁵ *Id.*

²⁶ *Id.*

determine whether there existed anomalies in trading patterns consistent with a conspiracy to manipulate ISDAfix rates.

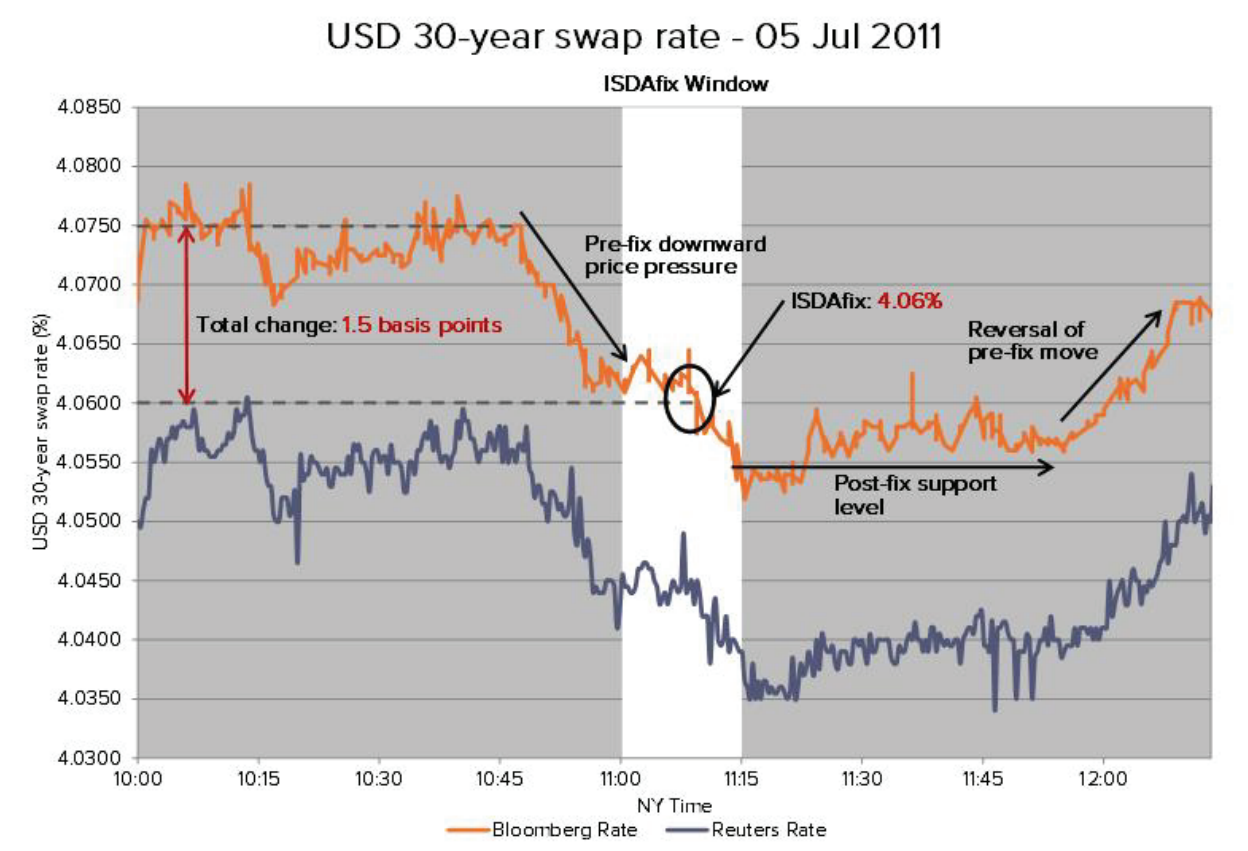
118. This analysis revealed numerous dates during the Class Period where statistically significant, highly anomalous transactional patterns show sharp plunges or spikes in a USD ISDAfix rate either during or immediately prior to the polling period, consistent with a conspiracy to “bang the close.” The results are consistent with a conspiracy to keep swap rates artificially high or low through the polling period.

119. Examples from April 12, 2011 and July 5, 2011 demonstrate this manipulative practice:



120. The chart above, mapping 10-year USD swap rates on April 12, 2011, demonstrates substantial downward rate pressure in the hour leading up to the polling period,

followed by a quick reversal after the polling period.²⁷ This chart provides a paradigmatic example of manipulation designed to keep the ISDAfix rate artificially low. Defendants pushed through a series of transactions and submitted executable bids and offers at artificially low fixed rates before the fixing process started in an effort to drive the ISDAfix rate down and then subsequently reversed course the moment the ISDAfix reference point was set.

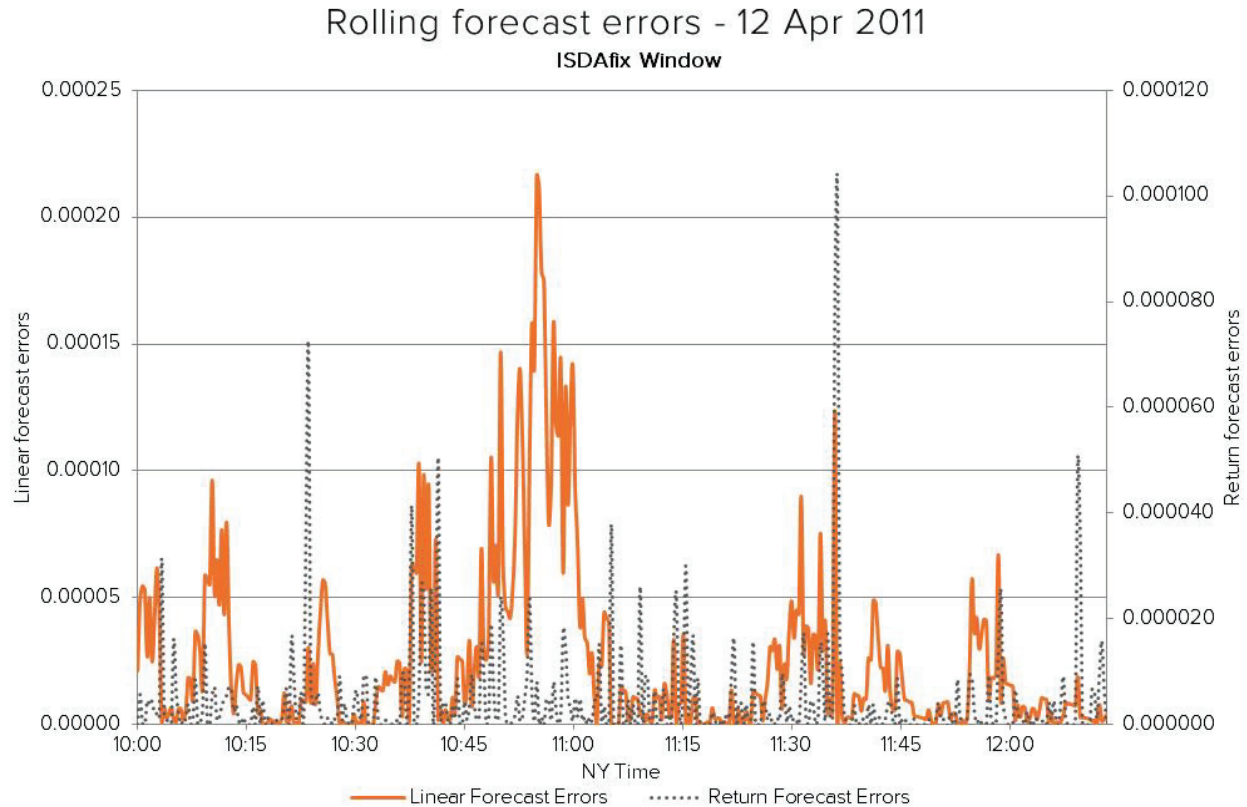


²⁷ The two lines represent historical intra-day swap prices quoted using two different sets of conventions of quoting swap rates. The orange line represents a swap rate quoted on a “semi-annual, 30/360” basis and is available through Bloomberg. The blue line represents a swap rate quoted on an “annual, act/360” basis and is available through Reuters. ISDAfix is quoted on the same basis as the orange Bloomberg rate, and the ISDAfix reference point and contributor quotes are linked to that rate. The two rates are very similar, and their trends will track each other with only a small, consistent gap in basis points. Plaintiff presents data using both where available to demonstrate the similarity between the two, but there is a greater historical availability for the Reuters rate, and in some charts only the Reuters data is available. Plaintiff will note when the data presented is solely based off the Reuters rate.

121. The chart above likewise shows a sharp drop in the 30-year swap rate just before the polling period, followed by a swift reversal 60 minutes later. This is another archetypal example of Defendants' efforts to execute an inordinately high volume of low-rate transactions and submit low-rate executable bids and offers in the minutes leading up to the polling period.

122. To further illustrate this form of manipulation, Plaintiff's experts calculated "rolling forecast errors" associated with anomalous moves in the swap rate. A measurement of "rolling forecast errors" consists of two separate metrics: the "linear forecast error," which is the squared difference between the current swap rate and the average swap rate in the previous 30 minutes, and the "return forecast error," which is calculated the same way using returns, as opposed to swap rates themselves.

123. A higher linear forecast error means that the ISDAfix rate is changing at a more rapid pace. Economic analysis confirms that often swap rates surrounding the polling period varied substantially from swap rates in the 30 surrounding minutes. Frequently, this is a pattern not present outside the polling period.



124. The above chart demonstrates that on April 12, 2011, the USD 10-year swap rate underlying the USD 10-year ISDAfix rate was changing twice as quickly during the 15 minutes before the polling period than at any other time in the morning. This strongly suggests a calculated shift in transactional behavior just prior to the start of the polling period – behavior that was not replicated outside that period.

125. Regularly on certain days throughout the Class Period, the period just before the polling period saw unexpected bursts of activity in USD swaps at ICAP due to Defendant Banks “banging the close.” Just before the 11:00 a.m. EST ISDAfix rate-setting window, a surge of trades and executable bids and offers caused swap rates to rapidly change. Once the reference point was generated at 11:02 a.m. and the ISDAfix rate-setting process was underway, the unusual activity promptly ceased. As a result the evidence shows swap rates rapidly changing from just prior to 11:00 a.m. until the ISDAfix reference point was set, after which swap rates

typically returned to their prior level. All of this points to one conclusion: Defendants were “banging the close” with the cooperation of ICAP to maximize the benefits to their positions for that day by manipulating USD ISDAfix rates.

3. Defendants Conspired with ICAP to Delay Publication of Trades

126. The Defendant Banks also manipulated ISDAfix rates by conspiring with ICAP to delay entry of certain swap transactions on Screen 19901 until the polling period was over. They did this to prevent undesired movements of the swap rate before the ISDAfix setting was complete.

127. Banks typically go through ICAP if they wish to engage in an interest rate swap with another dealer. ICAP brokers manually enter rates onto a screen and are in full control of when rates are published. Typically, when ICAP brokers an interest rate swap, it reports the swap rate for that transaction on Screen 19901 on a real-time basis.

128. The Defendant Banks conspired with ICAP to delay the publication of rates for certain interest rate derivative transactions that would move the swap rate in the opposite direction of how they were planning to manipulate ISDAfix.

129. Specifically, when one or more of the Defendant Banks wished to push ISDAfix up or down, they would simply instruct ICAP brokers to delay publication of unfavorable transactions. By conspiring to delay publication until after 11:02 a.m., Defendants were able to ensure that unfavorable transactions did not impact the ISDAfix reference point. According to a former ICAP broker that witnessed the practice first hand, because “ICAP enters the prices manually onto the screen,” that “allow[ed] dealers to tell the brokers to delay putting trades into

the system instead of in real time.”²⁸ The result was an artificial ISDAfix rate that was not reflective of actual market prices.

130. Input of swap rates would not be delayed unless ICAP decided to delay publication or ICAP was instructed to delay entry.

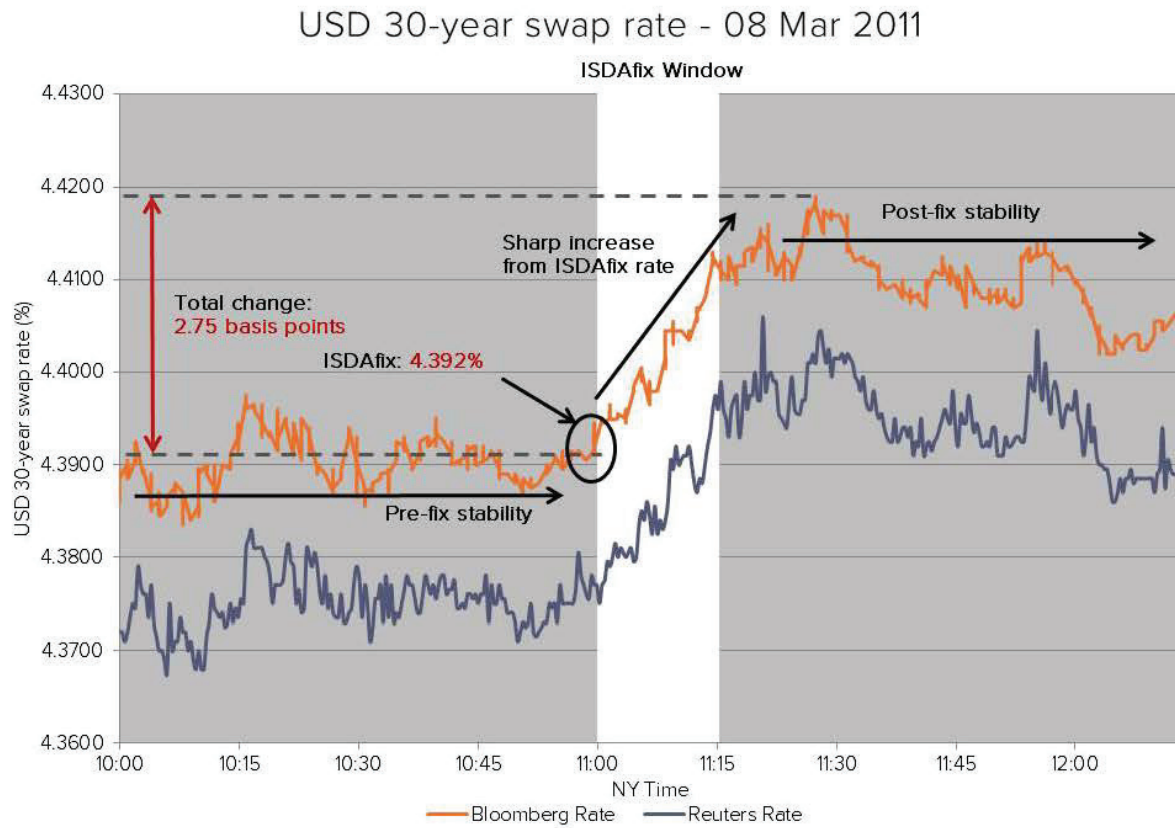
131. This practice was lucrative for Defendants because “[p]ublishing stale prices can potentially boost profits for banks in a market where trades are tied to tens of millions of dollars at a time.”²⁹ According to Bloomberg, “[i]f such a delay prevents the cost of the swap from moving one basis point, or 0.01 percentage point, that equals about \$1 million of profit for the dealer on a \$500 million swap that matures in 20 years.”³⁰

132. Economic analysis revealed transaction patterns strongly indicating that ICAP delayed the input of unfavorable transactions. This usually happened when Defendant Banks wished to maintain an existing, favorable swap rate through the beginning of the polling period. On numerous days, the swap rate remained stable until just after 11:00 a.m. EST, after which it shot up or plunged. The following charts detailing swap rates on March 8, 2011 and April 5, 2011 demonstrate this phenomenon:

²⁸ Matthew Leising, *ICAP Brokers on ‘Treasure Island’ Said to Reap ISDAfix Rewards* BUSINESSWEEK (Apr. 10, 2013), <http://www.businessweek.com/news/2013-04-10/icap-brokers-on-treasure-island-said-to-reap-isdafix-rewards>.

²⁹ Liam Vaughan, *Banks Drop Off IsdaFix Panel Amid Rate-Rigging Probes*, BLOOMBERG (Apr. 15, 2013), <http://www.bloomberg.com/news/2013-04-14/banks-drop-off-isdafix-panel-amid-rate-rigging-probes.html>.

³⁰ Matthew Leising, *ISDAfix Probe Unveils Benchmark Affecting Bonds to Annuities* BLOOMBERG (Apr. 15, 2013), <http://www.bloomberg.com/news/2013-04-14/isdafix-probe-unveils-obscure-rate-affecting-bonds-to-annuities.html>.

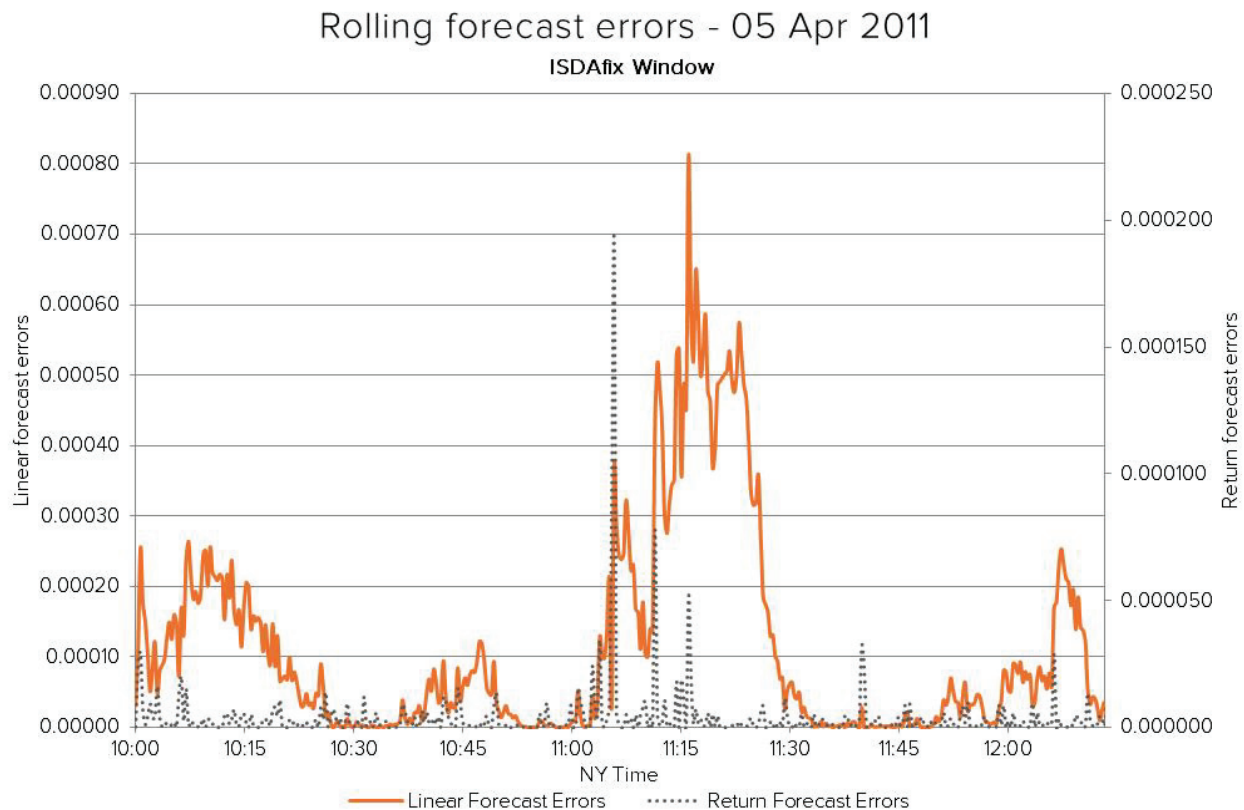




133. In each of the above charts, the orange and blue lines represent the average swap rate at a given point in time as calculated by Bloomberg and Reuters, respectively. In both charts, the average swap rate remains relatively stable until just after 11:00 a.m., when ICAP releases the ISDAfix “reference point.” Immediately after the “reference point” is released, the swap rate shoots up. This is precisely what one would expect to see if ICAP were manipulating the process by delaying input of certain data. The net result is an artificially low ISDAfix rate, to the benefit of Defendants and to the detriment of Plaintiff and the Class.

134. Once more, Plaintiff’s experts performed an analysis of “rolling forecast errors” in an effort to determine whether there had been manipulation of the ISDAfix rate. Again, a high rolling forecast error means that there are substantial shifts in the swap rates at a given point in time. Plaintiff’s experts calculated and charted the squared difference between the swap

rate/return rate at a given minute, and the swap rate/return rate in the preceding 30 minutes. This analysis revealed strong evidence of delayed input on the part of ICAP brokers.



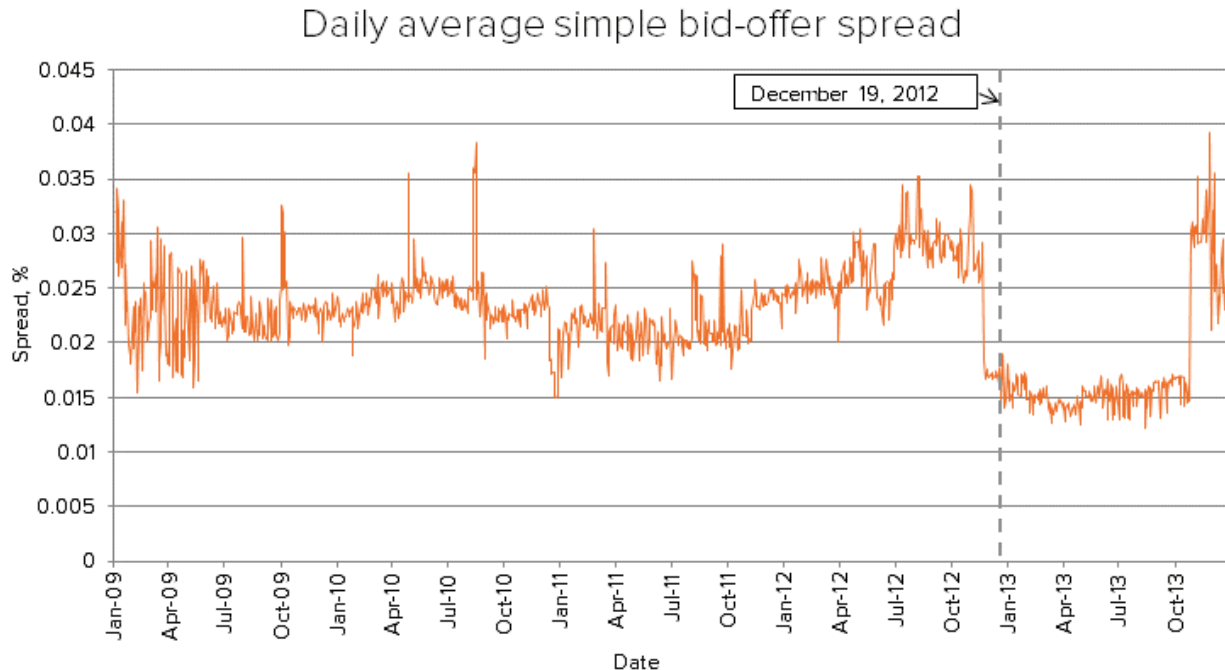
135. In the above chart, which measures data for the same day as the chart immediately above ¶130, one sees gyrations in swap rates beginning just after 11:00 a.m. EST, even though there is stability in the hour before and the hour after. The rolling forecast error is approximately three times higher during the period immediately after the reference point is set than it is at any other time. This suggests that swap rates accurately reflecting the market were not input until just after 11:02 a.m. EST. When they were eventually input, swap rates began to drastically change, eventually stabilizing at a level substantially different than the ISDAfix rate for that day as shown by the chart immediately above ¶130. This again suggests that ICAP brokers intentionally delayed inputting unfavorable swap rates to set the ISDAfix rate at a pre-determined level.

136. This practice was widespread until December 19, 2012, when UBS announced its settlement of the LIBOR matter. In the UBS settlement, there was, for the first time, a reference to inter-dealer brokers, like ICAP, being implicated in the LIBOR rate-fixing scandal. The U.K. FSA found that “UBS, through four of its Traders, *colluded with interdealer brokers* to attempt to influence JPY LIBOR submissions” made by Panel Banks.³¹ The collusion was extensive; the FSA found UBS made “more than 1000 documented requests to 11 Brokers at six Broker Firms.”³² Inter-dealer brokers were thus firmly implicated in LIBOR manipulation. Specifically, media reports disclosed that inter-dealer brokers worked with banks to publish false information on trading screens to facilitate a series of sham transactions for which the brokers received commissions, and to illicitly influence the rate submissions of other banks, all in an effort to manipulate the LIBOR rate.

137. Almost immediately after the UBS settlement was announced, trading patterns in interest rate swaps shifted.

³¹ FSA, *Final Notice to UBS AG* at 3 (Dec. 19, 2012) available at <http://www.fsa.gov.uk/static/pubs/final/ubs.pdf> (emphasis added).

³² *Id.*



138. In this chart, the orange line represents the daily average spread between bids and offers for 10-year USD swaps.³³ The higher the line, the greater the average difference between bids and offers on that day. The data shows that there was a marked tightening of spreads in late 2012 that lasted until October 2013.³⁴ Around December 19, 2012, the spread between bids and offers became significantly smaller, represented by the orange line falling to below 0.02%. The orange line also becomes less volatile, with fewer significant peaks and troughs.

139. If the entry of swap rates was delayed, it could cause the spread between bids and offers to increase because ICAP would record the Defendant Banks trading at their post-fix bids and offers and their delayed pre-fix bids and offers simultaneously. Thus, as the market would have moved during the time that some entries were delayed, it would momentarily appear as if

³³ The data in this chart is solely from the Reuters actual/360 swap rate data.

³⁴ The increase in spreads in October 2013 was likely caused by the combination of the federal government shutdown and the institution of regulations under the Dodd-Frank act that moved swaps trading onto public exchanges. See Matthew Phillips, *The CFTC Is Drowning in Market Data*, BLOOMBERG BUSINESSWEEK (Oct. 31, 2013), <http://www.businessweek.com/articles/2013-10-31/the-cftc-is-drowning-in-swaps-futures-trading-data>.

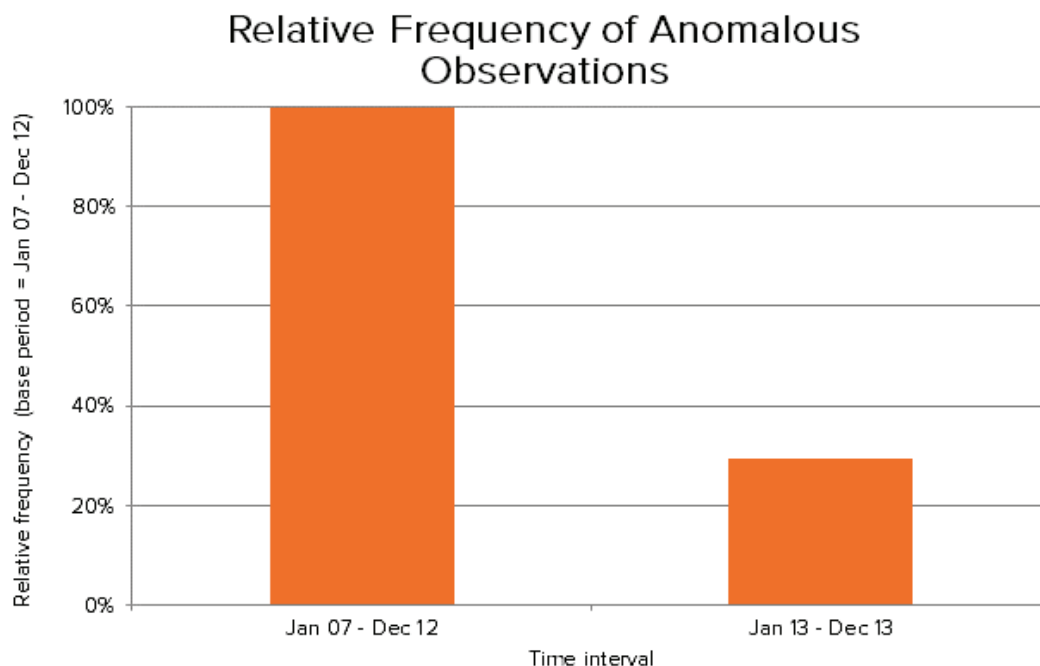
the Defendant Banks had a distortedly large bid-offer spread as all of their delayed transactions were entered simultaneously with their current trades. Thus, Defendant Banks' average spread would also be more volatile, as it would not represent Defendant Banks' reaction to a stable and predictable market but would instead reflect the results of a manipulated benchmark where the extent of manipulation varied each day.

140. This pattern of large, volatile spreads lasted through late 2012. After late 2012, when news of brokers' involvement in manipulating benchmarks like LIBOR and the potential investigation into other benchmarks was released, these high, volatile spreads are replaced with a lower, almost constant bid-offer spread. Such data shows that the practice of delaying entry of some transactions ended in late 2012 as the UBS settlement was announced.

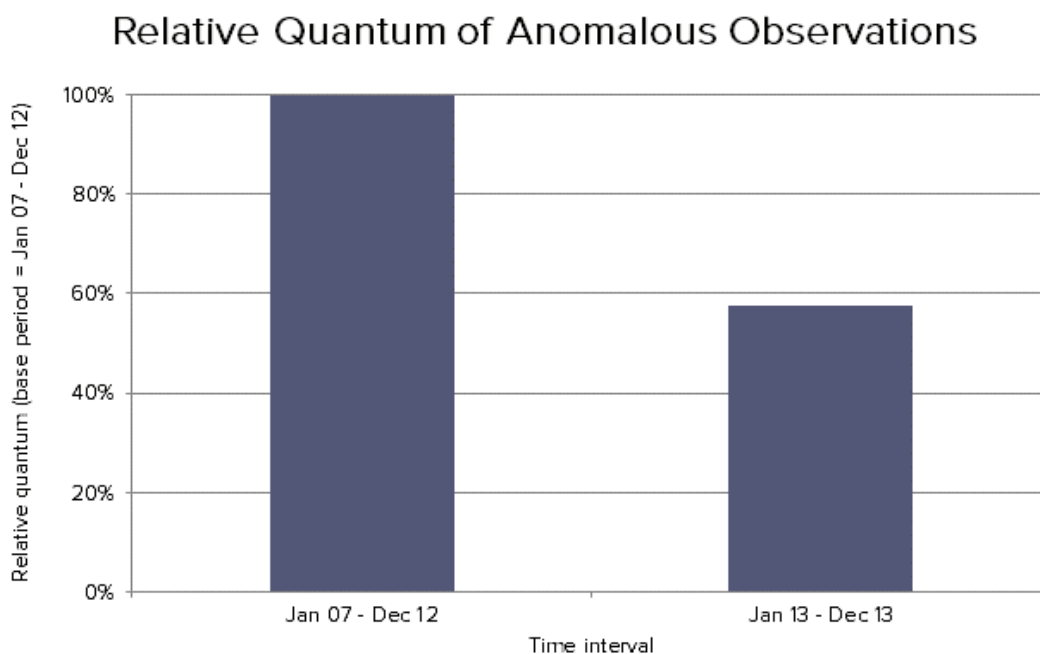
4. Defendants Agreed to Submit ISDAfix Quotes Based on Manipulated Reference Rates

141. The data shows that Defendants regularly colluded to match ICAP's manipulated ISDAfix reference rate. During the period of 2007 through December 2012, there were frequently massive, anomalous movements in the swap rates at or before the polling window, creating a manipulated ISDAfix reference rate. Yet during this same period, Defendants were far more likely to agree to that reference rate as an accurate measure of swap rates than after December 2012, when the ISDAfix reference rate was subject to fewer and smaller anomalous movements.

142. Plaintiff's experts constructed a model that examined historic data of USD swap rates for swaps with durations of 10 and 30 years. The model was designed to look for anomalous movements in such swap rates either before or during the 11:00 a.m. EST fixing window.



143. The graph above shows a relative comparison of how frequently there were anomalous movements either before or during the 11:00 a.m. EST fixing window. The data shows that there was roughly a 70% reduction in anomalous movements of swap rates around the fixing window after December 2012.



144. This graph shows a relative comparison of the quantum – or size – of the anomalous movements before or during the 11:00 a.m. EST fixing window. The data shows that such movements were over 40% smaller during the period after December 2012 than the anomalous movements during the period of January 2007 through December 2012.

145. The two graphs show that anomalous movements around the ISDAfix window were three times as common and almost twice as significant before December 2012 than afterwards. Defendant Banks were sophisticated and regular participants in the swap and swaption markets and either were or should have been aware of such anomalous movements. Defendant Banks were receiving an ISDAfix reference rate from ICAP that they knew was the result of an anomalous movement in swap rates, and, therefore, the reference rate was not likely to reflect accurate swap rates. Yet during the period of more frequent and larger anomalous movements that spanned 2007 through 2012, Defendant Banks were far more likely to agree that the ISDAfix reference rate set by ICAP reflected real market prices than they were after December 2012.

146. The charts between ¶¶90 and 91 show that Defendant Banks submitted quotes that were identical to ICAP's ISDAfix reference rate well over 90% of the time from 2009 through 2012. After December 19, 2012, however, the Defendant Banks' quotes began to diverge from the reference rate, as shown by the growing green and blue portions of each bar.

147. As explained above, during the period of high anomalous rate movements, the Defendant Banks would agree to the ISDAfix quote rate well over 90% of the time. After December 2012, when there were only a third as many anomalous movements and such movements were almost half as potent, the Defendant Banks were increasingly likely to disagree with the ISDAfix reference rate.

148. Defendant Banks did not blink when ICAP sent them reference rates influenced by anomalous movements. Instead, they readily agreed that such rates were accurate, and it was not until after the UBS settlement exposed similar activity that this agreement to accept ICAP's rate was broken. As the market became less manipulated, with fewer and weaker anomalous movements, one would expect Defendants to be more likely to accept the reference rate as an accurate rate, not less. Instead, Defendants became less likely to agree on an accurate ISDAfix rate. The only plausible explanation for why Defendants would be more likely to accept a reference rate when anomalous movements were more common and larger is that the Defendants had agreed to do so.

5. Defendants Manipulated ISDAfix to Profit on Swaptions and Other Interest Rate Derivatives

149. Defendant Banks conspired to manipulate ISDAfix to profit on an array of financial instruments that are linked to the ISDAfix rate. While Defendants manipulated ISDAfix to benefit their derivative books generally, they likely benefited most from cash-settled swaptions.

150. As discussed previously, the ISDAfix rate is crucial to the settlement value of cash-settled swaptions. How much a Defendant Bank has to pay to the purchaser of an in-the-money swaption typically depends entirely on the ISDAfix rate.

151. The Defendant Banks had a clear motive to manipulate the ISDAfix rate. Because the Defendant Banks are the dealers of cash-settled swaptions and often serve as counterparties, they could influence the profitability of their own derivatives by controlling the ISDAfix rate. For example, the settlement value of a cash-settled swaption is determined by comparing the pre-determined fixed rate outlined in the swaption to the comparable ISDAfix rate on the exercise date of the swaption. By driving the ISDAfix rate up or down several basis

points, Defendants ensured that they would make lower payments on in-the-money swaptions at the expense of Plaintiff and the Class.

**EQUITABLE TOLLING OF THE STATUTE OF LIMITATIONS DUE TO
DEFENDANTS' CONCEALMENT OF THE CONSPIRACY**

152. Defendants actively, fraudulently, and effectively concealed their collusion, as alleged herein, from Plaintiff and the Class. As a result of Defendants' fraudulent concealment, all applicable statutes of limitations affecting the Plaintiff's and the Class's claims have been tolled.

153. Defendants' conspiracy was by its nature secretive and self-concealing. Defendants engaged in a form of price fixing, which is inherently self-concealing and could not be detected by Plaintiff or other members of the Class. The secret nature of Defendants' conspiracy – which relied on non-public methods of communication, such as secure websites and private phone calls, to conceal their agreements to manipulate ISDAfix – prevented Plaintiff from uncovering their unlawful conduct.

154. Moreover, Defendants actively conspired to conceal their unlawful conduct. Defendants actively and jointly undertook trading strategies designed to conceal their collusive conduct by, as alleged above, executing trading strategies to push the "reference point" used by ICAP to a particular level so as to conceal their submission of off-market quotes to ICAP. The Defendant Banks also conspired with ICAP to delay the publication of real transactions to conceal the rates at which they were then executing, so as to prevent their conspiracy from being uncovered.

155. Due to Defendants' efforts to conceal their collusive conduct, Plaintiff could not, through the exercise of reasonable diligence, have learned of facts indicating that Defendants were colluding to manipulate the ISDAfix rate until April 2013 at the earliest, when news

sources first reported that the CFTC was investigating ICAP and the manner in which the ISDAfix rate is set. Even with the disclosure of the CFTC investigation, Plaintiff at that time did not know the full scope or purpose of Defendants' conspiracy.

156. Additionally, even after investigations into the LIBOR scandal cast a spotlight on some of Defendants' unlawful activities, Defendants did not fully break ranks, but instead continued to manipulate ISDAfix and engaged in ongoing efforts to keep their collusion hidden. It was only after subsequent investigations specifically into the manipulation of ISDAfix that Defendants began to wind down their conspiracy. When Defendants were confronted by the media about the allegations against them, they routinely and uniformly denied them.

157. Thus, while Plaintiff regularly monitored its investments and conducted due diligence to try to avoid being harmed by financial misconduct, practically speaking, there were limits to what could be done, given that so much of the over-the-counter interest rate derivatives market was opaque and shrouded in Defendants' secrecy. Further, reasonable due diligence could not have uncovered Defendants' conspiracy because: (1) Defendants' trades and trading strategies are not public information; (2) Defendants' quotes to ISDAfix were privately self-reported; and (3) the bilateral, non-exchange traded nature of the trades at issue further obscures what Defendants were, and are, doing at any particular time.

158. As a result of the self-concealing nature of the rate-fixing conspiracy, the active steps taken by Defendants to fraudulently conceal their conspiracy, and the lack of public information concerning material aspects of the conspiracy, the statute of limitations was tolled for Plaintiff's claim.

CLASS ACTION ALLEGATIONS

159. Plaintiff brings this action on behalf of itself and as a class action under Rules 23(a), (b)(2), and (b)(3) of the Federal Rules of Civil Procedure, seeking monetary damages on behalf of the following class (the “Class”):

All persons or entities who, beginning as early as January 1, 2006 and continuing to January 2014 (the “Class Period”), entered into interest rate derivative transactions, including interest rate swaps and swaptions, or purchased or sold financial instruments, that were benchmarked, priced, valued, or settled by reference to USD ISDAfix rates or that were executed shortly before, during, or shortly after the time of the daily ISDAfix setting window.

Excluded from the Class are Defendants and their employees, affiliates, parents, subsidiaries, and co-conspirators, whether or not named in this Complaint, and the United States government.

160. Plaintiff believes that there are thousands of members of the Class as described above, the exact number and their identities being known by Defendants, making the Class so numerous and geographically dispersed that joinder of all members is impracticable.

161. There are questions of law and fact common to the Class that relate to the existence of the conspiracy alleged, and the type and common pattern of injury sustained as a result thereof, including, but not limited to:

- a. whether Defendants and their co-conspirators engaged in a combination or conspiracy to fix, raise, maintain, stabilize, and/or otherwise manipulate ISDAfix rates in violation of the Sherman Act;
- b. the identity of the participants in the conspiracy;
- c. the duration of the conspiracy;
- d. the nature and character of the acts performed by Defendants and their co-conspirators in furtherance of the conspiracy;

- e. whether the conduct of Defendants and their co-conspirators, as alleged in this Complaint, caused injury to the business and property of Plaintiff and other members of the Class;
- f. whether Defendants and their co-conspirators fraudulently concealed the conspiracy's existence from the Plaintiff and the members of the Classes;
- g. whether Defendants' conduct caused cognizable legal injury under the Commodity Exchange Act ("CEA");
- h. the appropriate injunctive and equitable relief for the Class;
- i. whether Defendants were unjustly enriched at the expense of Plaintiff and the Class; and
- j. the appropriate measure of damages sustained by Plaintiff and other members of the Class.

162. Plaintiff purchased swaptions and other interest rate derivatives that were valued, executed, or settled using rates that were manipulated by Defendants, and its interests are coincident with and not antagonistic to those of the other members of the Class. Plaintiff is a member of Class; has claims that are typical of the claims of the Class members; and will fairly and adequately protect the interests of the members of the Class. In addition, Plaintiff is represented by counsel who are competent and experienced in the prosecution of antitrust and class action litigation.

163. The prosecution of separate actions by individual members of the Class would create a risk of inconsistent or varying adjudications.

164. The questions of law and fact common to the members of the Class predominate over any questions affecting only individual members, including legal and factual issues relating to liability and damages.

165. A class action is superior to other available methods for the fair and efficient adjudication of this controversy. Treatment as a class action will permit a large number of similarly situated persons to adjudicate their common claims in a single forum simultaneously, efficiently and without the duplication of effort and expense that numerous individual actions would engender. The Class is readily definable and is one for which records should exist in the files of Defendants and their co-conspirators, and prosecution as a class action will eliminate the possibility of repetitious litigation. Class treatment will also permit the adjudication of relatively small claims by many members of the Class who otherwise could not afford to litigate an antitrust claim such as the ones asserted in this Complaint. This class action presents no difficulties of management that would preclude its maintenance as a class action.

CAUSES OF ACTION

FIRST CAUSE OF ACTION

(Conspiracy to Restrain Trade in Violation of §1 of the Sherman Act)

166. Plaintiff hereby incorporates each preceding and succeeding paragraph as though fully set forth herein.

167. Defendants and their unnamed co-conspirators entered into and engaged in a combination and conspiracy in an unreasonable and unlawful restraint of trade in violation of §1 of the Sherman Act, 15 U.S.C. §1, *et seq.*

168. During the Class Period, Defendants entered into a series of agreements designed to create profit or limit liabilities amongst themselves by coordinating the manipulation of the

USD ISDAfix rates through the contributor quotation process or through other activities designed to artificially suppress, inflate, maintain, or otherwise alter USD ISDAfix rates.

169. This conspiracy to manipulate ISDAfix rates caused injury to both Plaintiff and the Class because they were deprived of the benefit of accurate ISDAfix rates reflecting actual market conditions, as well as the ability to accurately value swaptions and other financial instruments through reference to an accurate ISDAfix rate for some period during and following Defendants' unlawful conduct, and thus received, upon settlement of their trades, less in value than they would have received absent Defendants' wrongful conduct.

170. The conspiracy is a *per se* violation of §1 of the Sherman Act. Alternatively, the conspiracy resulted in substantial anticompetitive effects in the over-the-counter derivatives market. There is no legitimate business justification for, or pro-competitive benefits caused by, Defendants' conduct.

171. As a direct and proximate result of Defendants' violation of §1 of the Sherman Act, Plaintiff and the Class have suffered injury to their business and property throughout the Class Period.

172. Plaintiff and Class Members are entitled to treble damages for the violations of the Sherman Act alleged herein. Plaintiff and Class Members are also entitled to an injunction against Defendants, preventing and restraining the violations alleged above.

SECOND CAUSE OF ACTION

(Manipulation in Violation of the Commodity Exchange Act)

173. Plaintiff incorporates by reference and realleges the preceding allegations as though fully set forth herein.

174. Each Defendant is liable under §§6(c), 9, and 22, codified respectively at 7 U.S.C. §§9, 13 & 25, as well as CFTC Rules 180.1 and 180.2, for manipulation or attempted

manipulation of the price of USD interest rate swaps as set by ISDAfix or any contract or swap benchmarked, traded, priced and/or settled to ISDAfix or during the ISDAfix setting window.

175. The Defendant Banks had the ability to manipulate ISDAfix and interest rate derivatives, such as swaps and swaptions, referencing ISDAfix or executed during the rate-setting window. The Defendant Banks, through interstate commerce, knowingly submitted or caused to be submitted artificial rate quotes to ICAP. These submissions were used to determine the official published ISDAfix rates. By virtue of the ISDAfix setting methodology, the Defendant Banks had the ability to influence and affect the rates that would become the official ISDAfix rates. Further, because of their market power as the major dealers of interest rate derivatives, the Defendant Banks had the ability to influence the actual price of interest rate derivatives during the ISDAfix setting window through manipulative trading strategies or the delaying of publication of actual transactions.

176. Defendant ICAP also had the ability to manipulate the USD ISDAfix rates and the price of interest rate derivatives, such as swaps and swaptions, because it served both as the inter-dealer broker for the Defendant Banks in executing transactions and the administrator of ISDAfix. As a result, ICAP had the ability alone to move the ISDAfix rates to any particular level.

177. As evidenced by extensive communications produced to the CFTC and reported in the press, the Defendants fully, intentionally, and systematically manipulated USD ISDAfix to artificial levels for the express purpose of obtaining hundreds of billions of dollars in ill-gotten trading profits on interest rate derivatives, including swaps and swaptions, held by them or other co-conspirators, the price of which (and thus profits or losses) were benchmarked, traded, priced, and/or settled to ISDAfix. As an intended and direct consequence of Defendants' knowingly

unlawful conduct, the prices of ISDAfix and derivatives referencing ISDAfix were manipulated to artificial levels by the Defendants.

178. During the Class Period, ISDAfix and the prices of interest rate derivatives that were benchmarked, traded, priced, and/or settled to ISDAfix did not result from legitimate market information, competition, or supply and demand factors. As the foregoing economic evidence confirms, the ISDAfix rate and the value of interest rate derivatives were regularly manipulated to artificial levels during the Class Period.

179. Defendants directly caused artificial ISDAfix rates and artificial prices of interest rate derivatives. By executing manipulative trades among themselves, submitting artificial executable bids and offers, submitting identical quotes to ICAP, and conspiring to delay the publication of trades, the Defendant Banks directly caused artificial ISDAfix rates and values of interest rate derivatives that were benchmarked, traded, priced, and/or settled to ISDAfix.

180. As a direct result of Defendants' unlawful conduct, Plaintiff and members of the Class have suffered actual damages and injury in fact due to artificial ISDAfix rates and prices for interest rate derivatives that were benchmarked, traded, priced, and/or settled to ISDAfix.

THIRD CAUSE OF ACTION

(Principal-Agent Liability in Violation of §2 of the Commodity Exchange Act)

181. Plaintiff incorporates by reference and realleges the preceding allegations as though fully set forth herein.

182. Each Defendant is liable under §2(a)(1)(B) of the CEA, 7 U.S.C. §2(a)(1)(B), for the manipulative acts of their agents, representatives, and/or other persons acting for them in the scope of their employment.

183. Plaintiff and Class Members are each entitled to actual damages sustained in interest rate swaptions and other financial instruments for the violations of the CEA alleged herein.

FOURTH CAUSE OF ACTION

(Aiding and Abetting Liability in Violation of §22 of the Commodity Exchange Act)

184. Plaintiff incorporates by reference and realleges the preceding allegations as though fully set forth herein.

185. Defendants knowingly aided, abetted, counseled, induced, and/or procured the violations of the CEA alleged herein. Defendants did so knowing of each other's manipulation of the ISDAfix rate and willfully intended to assist these manipulations, which resulted in interest rate swaptions and other derivative products pricing becoming artificial during the Class Period in violation of §22(a)(1) of the CEA, 7 U.S.C. §25(a)(1).

186. Plaintiff and Class Members are each entitled to actual damages sustained in interest rate swaptions and other financial instruments for the violations of the CEA alleged herein.

FIFTH CAUSE OF ACTION

(Unjust Enrichment)

187. Plaintiff hereby incorporates each preceding and succeeding paragraph as though fully set forth herein.

188. Defendants financially benefited from their unlawful acts described herein, including, but not limited to, coordinating the manipulation of the ISDAfix rates through the contributor quotation process or through other activities designed to artificially suppress, inflate, maintain, or otherwise alter the ISDAfix rate. These unlawful acts caused Plaintiff and Class Members to suffer injury, lose money, and otherwise be deprived of the benefit of accurate

ISDAfix rates reflecting actual market conditions, as well as the ability to accurately value swaptions and other financial instruments through reference to an accurate ISDAfix rate, and thus received, upon execution or settlement of their trades, less in value than they would have received absent Defendants' wrongful conduct.

189. Because of the acts of Defendants and their co-conspirators as alleged herein, Defendants have been unjustly enriched at the expense of Plaintiff and members of the Class.

190. Plaintiff and members of the Class seek restoration of the monies of which they were unfairly and improperly deprived, as described herein.

PRAYER FOR RELIEF

Plaintiff demands relief as follows:

A. That the Court certify this lawsuit as a class action under Rules 23(a), (b)(2), and (b)(3) of the Federal Rules of Civil Procedure, that Plaintiff be designated as a class representative, and that Plaintiff's counsel be appointed as Class counsel for the Class;

B. That the unlawful conduct alleged herein be adjudged and decreed to violate §1 of the Sherman Act;

C. That Defendants be permanently enjoined and restrained from continuing and maintaining the conspiracy alleged in the Complaint;

D. That the Court award Plaintiff and the Class damages against Defendants for their violations of federal antitrust laws, in an amount to be trebled in accordance with such laws, plus interest;

E. That the Court award Plaintiff and the Class their costs of suit, including reasonable attorneys' fees and expenses, as provided by law; and

F. That the Court direct such further relief it may deem just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38(a) of the Federal Rules of Civil Procedure, Plaintiff demands a jury trial as to all issues triable by a jury.

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